

Listed Waterbody: **Carbonera Creek**

Listed Condition: **Pathogens**



Designated Beneficial Uses¹: MUN, AGR, IND, GWR, REC-1, REC-2, WILD, COLD, MIGR, SPWN, and COMM

Watershed Location: Santa Cruz County, drains into Branciforte Creek, which then drains into San Lorenzo River

Year added to California's CWA Section 303(d) List of Impaired Waters - 1994

Preliminary Schedule for Carbonera Creek – Pathogen Impairment Investigation project

Task	Completion Date	Notes
Project Plan	January, 2004	
Data Collection and Analysis	Prog.Report-June2005 Final- October 2005	Active *contact staff to submit data
Preliminary Project Report: Draft TMDL with Numeric Targets & Source Analysis	October 2005	
Project Report	May 2006	
Regulatory Action	February 2007	

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Basis for Listing: Listed based a letter from Santa Cruz County Environmental Health Services (dated Dec. 7, 1989) which stated “our studies have shown consistently that Carbonera Creek has high bacteria and nitrate levels.” Data shown in “An Evaluation of Wastewater Disposal and Water Quality in the San Lorenzo River Watershed” (Sept. 1989, Environmental Health Service, Health Services Agency, County of Santa Cruz) for the sampling location “Carbonera Creek below Scotts Valley” are reported as exceeding the REC –1 fecal coliform objective from October 1985 – September 1987. The same report indicated the sampling location “Carbonera Creek @ Hwy 1” did not exceed the fecal coliform objective during the same time period.

Background: Carbonera Creek was listed for impairment by fecal coliform in 1994. More recent data submitted to the Regional Board by the Santa Cruz County Environmental Health Services indicates the creek was not meeting the REC-1 objective for fecal coliform as recently as August 2001 (for sampling station Carbonera Creek @ Branciforte Creek, the most recent data in Regional Board files for that location are from February 2002). The *Water Quality Control Plan, Central Coast Region* (Basin Plan) contains the following bacteria objective for waters with contact water recreation (REC-1):

“Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.”

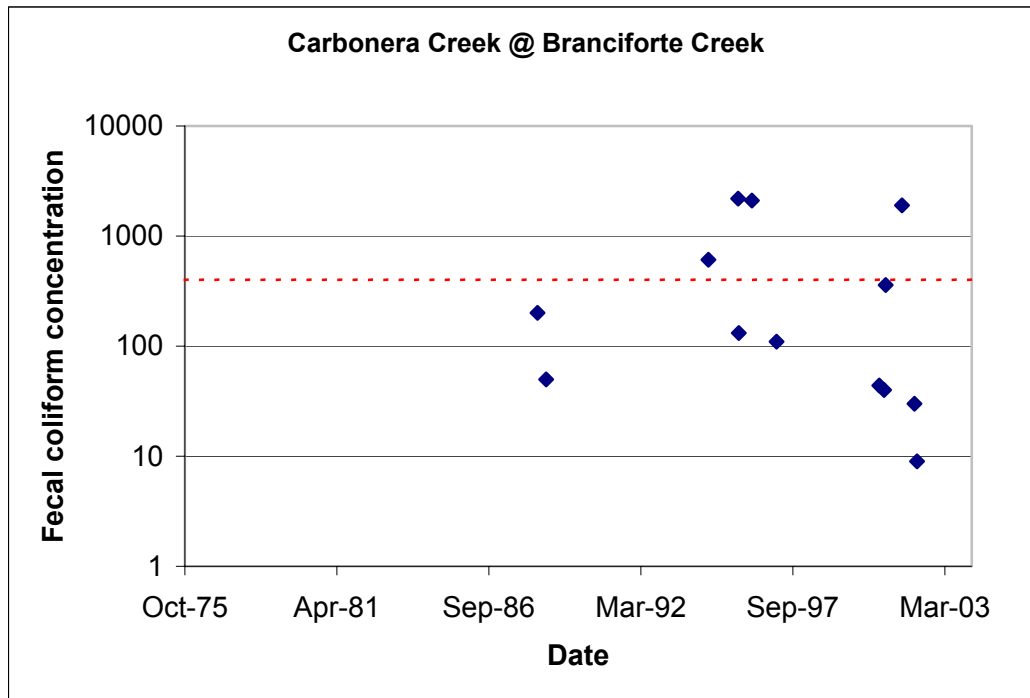
This objective is the most stringent objective for fecal coliform applicable to the designated uses of Carbonera Creek. Often, available datasets do not contain five samples in a 30-day period, so

¹ MUN=Municipal and Domestic Supply; AGR=Agricultural Supply; IND=Industrial Service Supply; GWR=Ground Water Recharge; REC-1 and REC-2 = Contact and Non-contact Recreation; WILD=Wildlife Habitat; COLD=Cold Freshwater Habitat; MIGR=Migration of Aquatic Organisms; SPWN=Spawning, Reproduction, and/or Early Development; and COMM=Commercial and Sport Fishing

the portion of the objective that is evaluated is that “no more than ten percent of total samples during any 30-day period exceed 400 MPN/100 mL.” One can note that, in instance where fewer than five samples were collected in 30 days, the “ten percent” threshold is exceeded if any one sample exceeds 400 MPN/ 100 mL.

Because the available data in Regional Board files (Figure 1) was sporadically collected during what appears to be a once per month sampling plan, staff believes more water quality data is necessary to determine if and to what extent water quality is impaired. Additional data will also be helpful in determining if there is any seasonal nature to the impairment, as currently available data indicate impairment in both the dry season (e.g., August and September) and the wet season (e.g., March). More recent data will be sought in Santa Cruz County Environmental Health Services files. Also, because most of the recent Santa Cruz County data represents the lower reach of Carbonera Creek and the data from the 1980s suggested a source in the city of Scotts Valley or upstream of the city, additional plans will have to be developed to investigate the current condition of the waterway. If the recent data confirm that the lower section of Carbonera Creek is impaired, staff will proceed with TMDL development. However, if the newest data do not indicate impairment below the City of Scotts Valley, then staff will evaluate the strength of the available dataset and may propose to remove Carbonera Creek- Pathogens from the 303(d) List.

Figure 1. Available Fecal Coliform Data for Carbonera Creek.



Revised Problem Statement

As discussed above and shown in Figure 1, the available data indicate that the numeric objective for fecal coliform under the REC-1 beneficial use has not been attained in the segment of Carbonera Creek downstream from the city of Scotts Valley to somewhat upstream of California Highway 1.

Phase 3. Data Collection and Analysis

Who	Regional Board (RB) staff – project lead scientist
Action Steps & Schedule	<ul style="list-style-type: none"> March 2004 – June 2004: Check with RB permitting staff to determine if sewage spills or pump station failures occur within the City of Scotts Valley. If sources can be identified from this information, we may not need additional monitoring. However, if not, more monitoring within the City limits, and in the County upstream of the City limits will be required. DNA analysis may be considered necessary to further clarify sources (possible at three sites to identify bacteria sources- Three sites are necessary because of the lower and upper section of Carbonera Creek are within Santa Cruz County jurisdiction. The middle section is within the City of Scotts Valley jurisdiction). <ul style="list-style-type: none"> July 2004 – August 2004: If necessary, develop and require Monitoring Plan (of City and/or County) to investigate whether the problem extends into the City of Scotts Valley or is within the County jurisdiction. September 2004-June 2005: oversee monitoring, Prepare Progress Report of Monitoring. July - August 2005: Oversee remainder of Monitoring Plan and submittal of results. September 2005-October 2005: Develop Data Collection and Analysis Report. This report will present data collected from the last five years of Regional Board/County files and CCAMP, and any data made available by City or County monitoring.
Cost (PY & \$)	<u>Staff Resources:</u> for FY 2004-05: 0.15 <u>Contract Resources:</u> = None <u>Other:</u> Need cooperation of County, City of Scotts Valley, or Volunteer Monitoring groups to collect additional data
Issues	<ul style="list-style-type: none"> assumes timely cooperation of City and/or County for monitoring; their resource limitations may delay monitoring and the timeframe for this project plan would need to be adjusted accordingly

Phase 4. Project Analysis

Who	Regional Board staff – project lead scientist Stakeholders – Provide Review and Comments on Source Analysis
Action Steps & Schedule	<ul style="list-style-type: none"> November 2004 – September 2005: Perform source analysis relating locations of target exceedences to determine probable pathogen sources causing exceedences; complete Source Analysis may include GIS analysis to determine land uses in watershed September 2005- October 2005: Summarize Numeric Targets and describe Source Analysis in writing as part of Draft TMDL Report.
Cost (PY & \$)	<u>Staff Resources:</u> for FY 04-05= 0 PY (this phase); 05-06 = 0.15 PY (this phase) <u>Contract Resources:</u>
Issues	

Phase 5. Regulatory Action Selection: Prepare Project Report

Who	Regional Board staff: project lead Stakeholders: Stakeholder will review draft of Project Report
Action Steps & Schedule	<ul style="list-style-type: none"> January 2006: Prepare a draft Project Report with Proposed Regulatory action(s), (such as a TMDL and allocations) necessary to attain compliance with water quality standards February- March 2006: Send Project Report to Stakeholders for review and comment. April - May 2006: Consider stakeholder comments and revise report as appropriate, prepare
Cost (PY & \$)	<u>Staff Resources</u> : for FY 05-06 = 0.1 PY (this phase);
Issues	

Phase 6. Propose Regulatory Action

Who	Regional Board staff: project lead Stakeholders: Stakeholders will review draft of proposed Regulatory Action
Action Steps & Schedule	<ul style="list-style-type: none"> June- July 2006: Prepare a final Project Report of proposed Regulatory Action (such as TMDL, allocations, implementation and monitoring plan); Prepare other documents as necessary for proposed regulatory action (e.g. resolution, CEQA documents, etc) August 2006- October 2006: Obtain Scientific Peer Review (or other legal or technical review) and prepare response to comments as necessary for selected Regulatory Action. November 2006 -February 2007: present proposed Regulatory Action to Regional Board for approval
Cost (PY & \$)	<u>Staff Resources</u> : for FY 06-07 = 0.2 PY
Issues	

Budget and Schedule Uncertainties:*Budget: short-term:**Long-term:**Schedule:*